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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,430	01/12/2004	Mark Edward Shaw	200313269-1	2158

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INTELLECTUAL PROPERTY ADMINISTRATION
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EXAMINER

THOMPSON, JR, OTIS L

ART UNIT	PAPER NUMBER
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2619

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/756,430	Applicant(s) SHAW ET AL.	
	Examiner OTIS L. THOMPSON, JR	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 14 recites the limitation "the transmitting device". There is insufficient antecedent basis for this limitation in the claim. It is noted that claim 6, in which the source generates a time out when no response is received, is similar to claim 14. Therefore, for the purposes of examination, claim 14 is interpreted as having the same features as claim 6.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-4, 7-12, and 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Green et al. (US 2004/0022257 A1).

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6. Regarding claim 1, Green et al. discloses *a method of preventing a first partition of a partitionable computer system from transmitting a packet to a second partition of the partitionable computer system comprising:*

a. *Receiving the packet from the first partition by a routing device, the packet comprising a source address and a destination address* (Paragraph 0049, see "...the router logic receives a valid IB packet...router logic determines if the DLID [destination local identifier, i.e. destination address]...further determines if the SLID [source local identifier, i.e. source address]..."; Abstract, see "...router...between separate subnets...", i.e. one of the subnets is the first partition);

b. *Determining if the packet is allowed to be received by the destination address* (Paragraph 0059, see "...router logic verifies the access properties of the SGID and DGID [e.g. whether they are in the same partition and are allowed to communicate with each other]...");

c. *Prohibiting transmission of the packet to the destination address when the destination address is not allowed to receive the packet* (Paragraph 0059, see "...access properties are not valid [i.e. destination address is not allowed to receive the packet], the packet is dropped [i.e. prohibiting transmission of the packet]...").

7. Regarding claim 2, Green et al. discloses that *the determining comprises comparing the destination address to a set of addresses in a routing table* (Paragraph 0056, see "...destination GID [DGID] [i.e. destination address] is provided to a 'lookup table' [i.e. set of addresses in routing table]..."; Paragraph 0059, see "...router logic tests the results of the table lookup to determine if a match was found...", i.e. comparing).

8. Regarding claim 3, Green et al. discloses that *the determining comprises indexing a bit mask* (Paragraph 0056, see "...table is...implemented as a B-tree search in parallel with a hash table index search [i.e. indexing a bit mask] to minimize the number of lookups...").

9. Regarding claim 4, Green et al. discloses that *the prohibiting comprises dropping the packet* (Paragraph 0059, see "...access properties are not valid, the packet is dropped...").

10. Regarding claim 7, Green et al. discloses that *the routing device is a crossbar* (Figure 4 label 402, see "Crossbar Switch").

11. Regarding claim 8, Green et al. discloses *a system for preventing a first partition of a partitionable computer system from transmitting a packet to a second partition of the partitionable computer system comprising:*

d. *A processor of the first partition configured to assemble the packet, the packet comprising a source address and a destination address* (Abstract, see "...router...between separate subnets...", i.e. one of the subnets is the first partition; Figure 1, see routers coupled to subnets; Paragraph 0045, see "...router logic comprise...embedded RISC processors ...router logic processes...determines new packet headers [i.e. assemble the packet], and routes..."; Paragraph 0049, see "...the router logic receives a valid IB packet...router logic determines if the DLID [destination local identifier, i.e. destination address]...further determines if the SLID [source local identifier, i.e. source address]...");

e. *A transmitter in communication with the processor, the transmitter configured to transmit the packet* (Paragraph 0045, see "...router logic...routes the

outgoing packets to the appropriate IB link control logic [i.e. transmitter for transmitting the packet]...”);

f. *A routing device that receives the packet* Paragraph 0049, see “...the router logic receives a valid IB packet... router logic determines if the DLID...further determines if the SLID...”, i.e. routing device that receives the packet) *comprising a port* (Paragraph 0027, see “...each port is assigned...a local identifier [LID]...”, i.e. Packet comprises DLID and SLID, and the each LID comprises a port) *and a firewall in communication with the port address* (Paragraph 0060, see “...LID has been found...router logic [i.e. firewall]...runs one or more filters...filters are programmable tests that are based on selected packet header fields and that have programmable outcomes [e.g., whether a counter should be incremented, whether a packet should be dropped, whether a packet should be passes to the subnet manager]...”; By definition, a firewall permits, denies, encrypts, or proxies all computer traffic between different security domains based upon a set of rules or other criteria; Paragraph 0056, see “...destination GID [DGID] is provided to a ‘lookup table’...”; Paragraph 0059, see “...router logic tests the results of the table lookup to determine if a match was found...”, i.e. firewall in communication with the port address).

12. **Regarding claim 9**, Green et al. discloses that *the routing device is a crossbar* (Figure 4 label 402, see “Crossbar Switch”).

13. **Regarding claim 10**, Green et al. discloses that *the firewall comprises a routing table of allowed destination addresses* (Paragraph 0056, see “...destination GID [DGID] is provided to a ‘lookup table’...”; Paragraph 0059, see “...router logic tests the results of the

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table lookup to determine if a match was found...”, i.e. lookup table is comprised of allowed destination addresses since a match to the DGID of the current has to be found in order to route the packet).

14. **Regarding claim 11**, Green et al. discloses that *the firewall comprises a bit mask* (Paragraph 0056, see “...table is...implemented as a B-tree search in parallel with a hash table index search [i.e. bit mask] to minimize the number of lookups...”).

15. **Regarding claim 12**, Green et al. discloses that *the routing device is configured to drop the packet when the firewall determines the destination address is not allowed to receive the packet* (Paragraph 0059, see “...router logic verifies the access properties of the SGID and DGID [e.g. whether they are in the same partition and are allowed to communicate with each other]...”; Paragraph 0059, see “...access properties are not valid [i.e. destination address is not allowed to receive the packet], the packet is dropped...”).

16. **Regarding claim 15**, Green et al. discloses *a routing device in communication with a first partition of a partitionable computer system configured to prevent the transmission of a packet between the first partition and a second partition comprising:*

g. *A port in communication with the first partition* (Abstract, see “...router...between separate subnets...”, i.e. one of the subnets is the first partition; Figure 1, see routers coupled to subnets; Routers inherently have ports to communicate with each subnet) *configured to receive the packet, the packet having a source address and a destination address* (Paragraph 0049, see “...the router logic receives a valid IB packet...router logic determines if the DLID [destination local identifier, i.e. destination address]...further determines if the SLID [source local identifier, i.e. source address]...”);

h. *A firewall associated with the port* (Paragraph 0060, see "...LID has been found...router logic [i.e. firewall]...runs one or more filters...filters are programmable tests that are based on selected packet header fields and that have programmable outcomes [e.g., whether a counter should be incremented, whether a packet should be dropped, whether a packet should be passes to the subnet manager]..."; By definition, a firewall permits, denies, encrypts, or proxies all computer traffic between different security domains based upon a set of rules or other criteria; Paragraph 0056, see "...destination GID [DGID] is provided to a 'lookup table'..."; Paragraph 0059, see "...router logic tests the results of the table lookup to determine if a match was found...", Figure 4 labels 408 coupled to labels 404 and 406, i.e. firewalls associated with ports).

17. **Regarding claim 16**, Green et al. discloses that *the firewall comprises a routing table of allowed destination addresses* (Paragraph 0056, see "...destination GID [DGID] is provided to a 'lookup table'..."; Paragraph 0059, see "...router logic tests the results of the table lookup to determine if a match was found...", i.e. lookup table is comprised of allowed destination addresses since a match to the DGID of the current has to be found in order to route the packet).

18. **Regarding claim 17**, Green et al. discloses that *the firewall comprises a bit mask* (Paragraph 0056, see "...table is...implemented as a B-tree search in parallel with a hash table index search [i.e. bit mask] to minimize the number of lookups...").

19. **Regarding claim 18**, Green et al. discloses that *firewall is configured to drop the packet when the firewall determines the destination address is not allowed to receive the packet* (Paragraph 0059, see "...router logic verifies the access properties of the SGID

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and DGID [e.g. whether they are in the same partition and are allowed to communicate with each other]..."; Paragraph 0059, see "...access properties are not valid [i.e. destination address is not allowed to receive the packet], the packet is dropped...").

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 5, 6, 13, 14, and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Green et al., as applied to claims 1, 8, and 15 respectively above, and further in view of Baehr et al. (US 5,884,025).

22. Regarding claim 5, 13, and 19, Green et al. discloses a transmitter, as shown above, but does not specifically disclose *a transmitter configured to send (or transmit) and error message to the source address of the packet when the packet is dropped.*

However, Baehr et al. discloses a screening system in which transmitted packets may be dropped with or without an error message generated to the sender of the packet (Column 7 lines 10-15). This helps prevent attacks on the system (Column 7 lines 16-17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the teachings of Baehr et al. into Green et al. in order to help prevent attacks on the system.

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23. Regarding claims 6 and 14, Green et al. in view of Baehr et al. discloses that an error message may or may not be generated to a sender in the case of a dropped packet but does not specifically disclose *generating a time out by the source address when a response to the packet is not received within a specified time period*.

However, it is well known in the art for a sender (i.e. *source address*) to await a response to a transmission for only a predetermined amount of time (i.e. *time out*) in order to prevent the sender from having to wait forever to receive a response when the sender could be performing other processes. In the case of Green et al. in view of Baehr et al., if no error message is generated to the sender if a packet is dropped, then the sender has to have some way to know when to move on to other processes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the system of Green et al. in view of Baehr et al. to include a time out when no response is received within a specified time period in order to prevent the sender from having to wait forever to receive a response when the sender could be performing other processes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OTIS L. THOMPSON, JR whose telephone number is (571)270-1953. The examiner can normally be reached on Monday to Thursday 7:30 am to 5:00 pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag Shah can be reached on (571)272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Otis L Thompson, Jr./
Examiner, Art Unit 2619

May 8, 2008

/Chirag G Shah/

Supervisory Patent Examiner, Art Unit 2619